



Heriot-Watt University
Research Gateway

Erratum

Citation for published version:

Murzyn, P, Pidgeon, CR, Phillips, PJ, Merrick, M, Litvinenko, KL, Allam, J, Murdin, BN, Ashley, T, Jefferson, JH, Miller, A & Cohen, LF 2005, 'Erratum: Suppression of D'yakonov-Perel spin relaxation in InAs and InSb by n-type doping at 300 K (Applied Physics Letters (2003) 83 (5220))', *Applied Physics Letters*, vol. 87, no. 12, 129901, pp. 1. <https://doi.org/10.1063/1.2055967>

Digital Object Identifier (DOI):

[10.1063/1.2055967](https://doi.org/10.1063/1.2055967)

Link:

[Link to publication record in Heriot-Watt Research Portal](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Applied Physics Letters

General rights

Copyright for the publications made accessible via Heriot-Watt Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

Heriot-Watt University has made every reasonable effort to ensure that the content in Heriot-Watt Research Portal complies with UK legislation. If you believe that the public display of this file breaches copyright please contact open.access@hw.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Erratum: “Suppression of D’yakonov-Perel spin relaxation in InAs and InSb by *n*-type doping at 300 K” [Appl. Phys. Lett. 83, 5220 (2003)]

P. Murzyn, C. R. Pidgeon, and P. J. Phillips

Department of Physics, Heriot-Watt University, Edinburgh EH14 4AS, United Kingdom

M. Merrick, K. L. Litvinenko, J. Allam, and B. N. Mordin

Advanced Technology Institute, University of Surrey, Guildford GU2 7XH, United Kingdom

T. Ashley and J. H. Jefferson

QinetiQ, St Andrews Road, Malvern, Worcs WR14 3PS, United Kingdom

A. Miller

School of Physics and Astronomy, University of St Andrews, St Andrews KY16 9SS, United Kingdom

L. F. Cohen

Blackett Laboratory, Imperial College, London SW7 2BW, United Kingdom

(Published online 13 September 2005)

[DOI: [10.1063/1.2055967](https://doi.org/10.1063/1.2055967)]

Figure 2, the spin decay for *n*-InAs with concentration $1 \times 10^{17} \text{ cm}^{-3}$, showed a spin lifetime of $\tau_s = 1.6 \pm 0.5 \text{ ns}$. The data of Fig. 2 were incorrect due to an artifact of the quarter-wave plates used and this was discovered when we replaced it with a ZnSe photo-elastic modulator (PEM) at normal incidence with no other optical components between it and the

sample. The corrected data for Fig. 2 are shown below with $\tau_s = 24 \pm 2 \text{ ps}$. This represents an increase in lifetime with doping over that of the lower concentration sample as before, but far less pronounced than we previously thought. Our remark that this increase is in excellent agreement with the predictions of the simple models is no longer justified.

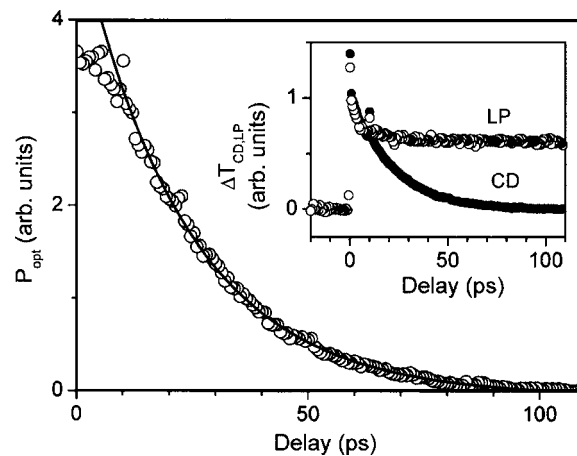


FIG. 2. The optical polarization $P_{\text{opt}} = \Delta T_{\text{CD}} / \Delta T_{\text{LP}}$ as a function of pump-probe delay time for heavily doped *n*-InAs at 300 K (sample IC311, $n = 1.0 \times 10^{17} \text{ cm}^{-3}$). The use of the photoelastic modulator directly gives the circular dichroism (CD), $\Delta T_{\text{CD}} = \Delta T_{\text{SCP}} - \Delta T_{\text{OCP}}$, i.e., the difference in the transmission changes for pump and probe having the same circular polarization (SCP) and the opposite (OCP), shown as the solid symbols in the inset. The population decay, $\Delta T_{\text{LP}} \propto \Delta T_{\text{SCP}} + \Delta T_{\text{OCP}}$, was obtained from a linearly polarized (LP) experiment, shown as the open symbols in the inset. The solid curve is a fit of a single exponential, giving a measured decay constant of $\tau_s = 24 \pm 2 \text{ ps}$.